On the whole, the author arrives at the conclusion that the phenomena noticed in this paper are altogether molecular, and that they establish the following principles: first, that the passage of the electric current modifies, even in solid bodies, the arrangement of the particles; and secondly, that the action of magnetism, in like manner, produces an analogous modification in the molecular constitution of all bodies. This has already been demonstrated by Faraday in the case of transparent bodies, in its effects on polarized light; and is now extended by M. De la Rive to opaque conducting bodies, by employing, instead of polarized light, a discontinuous electric current.

"On the Ganglia and Nerves of the Virgin Uterus." By Robert Lee, M.D., F.R.S., &c.

The author states that his recent dissections have enabled him to verify the descriptions he gave of the ganglia and nerves of the uterus in his papers already published in the Philosophical Transactions, and also to detect the existence of ganglia situated in the muscular coat of the uterus, and of plexuses of nerves accompanying all the blood-vessels and absorbents ramifying in its walls, between the peritoneum and lining membrane. By examining the hearts of a fœtus, of a child of six years of age, of an adult in the sound state, a human heart greatly hypertrophied, and the heart of an ox, he found that there exists a striking analogy between the ganglia and nerves of the uterus and those of the heart. He ascertained by microscopic observation that the muscular and vascular structures of the auricles and ventricles are endowed with numerous ganglia and plexuses of nerves, which, as far as he knows, have not yet been described, and which enlarge simultaneously with the natural growth of the heart, and also continue to enlarge during its morbid conditions of hypertrophy. The author also finds that the size of the ganglia and nerves of the left auricle and ventricle, in the normal state, is more than double that of the corresponding parts on the right side. A description is then given of two elaborate drawings which accompany the paper.

"On a new and practical form of Voltaic Battery of the highest powers, in which Potassium forms the positive element." By John Goodman, Esq. Communicated by S. Hunter Christie, Esq., A.M., Sec. R.S.

The author succeeded in constructing a voltaic arrangement of some power by fixing a piece of potassium to the end of a copper wire, placed in a tube containing naphtha, and bringing it in contact with a small quantity of mercury, held by a layer of bladder closing the lower end of the tube, which was itself immersed in acidulated water immediately over a piece of platinum, and then completing the circuit by establishing a metallic contact between the copper wire and the platinum. This battery acted with energy on the galvanometer, and effected the decomposition of water. A series of twelve pairs of similar plates exhibited a sensible attraction

of a slip of gold leaf. Thus it appears that the substance which possesses the highest chemical affinity manifests also the greatest power of electrical tension.

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January 21, 1847.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

Henry Dyke Acland, M.D. was elected a Fellow of the Society.

"On Photographic Self-registering Meteorological and Magnetical Instruments." By Francis Ronalds, Esq., F.R.S., &c.

The apparatus employed by the author at the Kew Observatory, and which he terms the Photo-Electrograph, is described by him in the following words:—"A rectangular box, about sixteen inches long and three square, constitutes the part usually called the *body* of a kind of lucernal microscope. A voltaic electrometer (properly insulated, and in communication with an atmospheric conductor) is suspended within the microscope, through an aperture in the upper side, and near to the *object* end. That end itself is closed by a plane of glass, when daylight is used, and by condensing lenses, when a common Argand lamp is employed. In either case an abundance of light is thrown into the microscope. Between the electrometer and the ether, or eye-end of the microscope, fine achromatic lenses are placed, which have the double effect of condensing the light upon a little screen, situated at that eye-end, and of projecting a strong image of the electrometer, in deep *oscuro*, upon it. Through the screen a very narrow slit, of proper curvature, is cut (the chord of the arc being in a horizontal position), and it is fitted into the back of a case, about two-and-a-half feet long, which case is fixed to the eye-end of the microscope, at right angles with its axis, and vertically. Within the case is suspended a frame, provided with a rabbet, into which two plates of pure thin glass can be dropped, and brought into close contact by means of six little bolts and nuts. This frame can be removed at pleasure from a line, by which it is suspended, and the line, after passing through a small aperture (stopped with grease) cut through the upper end of the long case, is attached to a pulley (about four inches in diameter), fixed, with capacity of adjustment, on the hour arbor of a good clock. Lastly, counterpoises, rollers, springs, and a straight ruler are employed for ensuring accurate rectilineal sliding of the frame, when the clock is set in motion.

"A piece of properly prepared photographic paper is now placed between the two plates of glass in the moveable frame; the frame is removed (in a box made purposely for excluding light), and is suspended in the long case; this is closed, so as to prevent the possibility of extraneous light entering with it; the clock is started, and the time of starting is noted.